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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/658,168

09/08/2003

John A. Knoch

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02/06/2006

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EXAMINER

KHUU, HIEN DIEU THI

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/658,168

Applicant(s)

KNOCH ET AL.

Examiner

Cindy D. Khuu

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 11-14 and 17 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 8-10, 15, 16 and 18-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 11-12, 7 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Uritsky et al. (US 5,870,187)

With respect to claims 1 and 11, Uritsky discloses a computer program and a method of qualifying a process tool (Fig. 4) comprising steps of: (a) finding a plurality of pre-scan (402; prior to processing) defect locations on a surface of a semiconductor wafer (Column 4, lines 38-44); (b) subjecting the semiconductor wafer to processing by a process tool after step (a) (406; Column 4, lines 45-46); (c) finding a plurality of post-scan (410; post processing) defect locations on the surface of the semiconductor wafer after step (b) (Column 4, lines 44-50); and (d) calculating which defects were added by the process tool from the pre-scan defect locations and the post-scan defect locations (Column 4, lines 52-67; Column 5, lines 5-15).

With respect to claims 2 and 12, Uritsky further discloses a computer program and a method of displaying a map of the defects (200 and 300) added by the process tool (Column 4, lines 63-67).

With respect to claims 7 and 17, Uritsky further discloses a computer program and a method wherein step (d) comprises comparing a distance between a first point corresponding to a defect location in

a first list of pre-test defect locations and a second point corresponding to a defect location in a second list of post-test defect locations with a registration tolerance (Column 4, lines 63-67 to Column 5, lines 1-4).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-4 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uritsky et al. (US 5,870,187) in view of Dor et al. (US 6,701,259).

With respect to claims 3-4 and 13-14, Uritsky teaches everything claimed, as applied above, with the exceptions of displaying a scatter plot of a point representative of a total number of defects added by the process tool to the semiconductor wafer; and displaying a selected failure threshold on the scatter plot.

However, to do so is well known as taught by Dor. Dor teaches a computer program and a method of displaying a scatter plot of a point representative of a total number of defects added by the process tool to the semiconductor wafer (Fig. 7, ID 704); and displaying a selected failure threshold (excursion limit) on the scatter plot (Table 5; Fig. 5; ID 532).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to display a scatter plot of a point representative of a total number of defects added by the process tool to the semiconductor wafer as disclosed by Dor for the purpose of visually indicate the location of defects on the wafer (Column 6, lines 43-46); and display a selected failure threshold on the scatter plot as disclosed by Dor for the purpose of indicating whether all wafers with defects will be displayed or only wafers that exceeded the excursion limit (Column 14, lines 33-38).

***Allowable Subject Matter***

Claims 5-6, 8-10, 15-16 and 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record, taken alone or in combination, fails to disclose or render obvious, which makes the following claim allowable over the prior art:

With respect to claims 5 and 15, a computer program and a method of selecting the point on the scatter plot to initiate a display of one of a pre-test wafer map, a post-test wafer map, and an added defect map of defects added by the process tool to the semiconductor wafer.

With respect to claims 8 and 18, a computer program and a method wherein the defect location in the second list corresponding to the second point is marked as a non-adder if the distance is less than the registration tolerance.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Response to Arguments***

Applicant's arguments and amendments filed on 12/19/05 have been fully considered but they are not persuasive.

During patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification. In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad

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interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969)

Regarding the 35 U.S.C. 102(e) rejections, Applicant argues that Dor lacks the claimed step of finding a plurality of pre-scan defect locations on a surface of a wafer before processing. Further, Applicant argues that Dor lacks the claimed step of calculating which defects were added by the process tool from the pre-scan defect locations and the post-scan defect locations.

However, Examiner's position is that Uritsky teaches of finding a plurality of pre-scan (402; prior to processing) defect locations on a surface of a semiconductor wafer (Column 4, lines 38-44); and calculating which defects were added by the process tool from the pre-scan defect locations and the post-scan defect locations (Column 4, lines 52-67; Column 5, lines 5-15).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Fax/Telephone Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cindy D. Khuu whose telephone number is (571) 272-8585. The examiner can normally be reached on M-F, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

1/24/06

  
John Barlow  
Supervisory Patent Examiner  
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